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ABSTRACT

Annotations from 12 entries in the ERIC database were selected as significant and useful sources of information about small-group cooperative learning. Five of the citations are literature reviews. Among these is a meta-analysis, drawn from 217 studies, about the effects of cooperative learning on student achievement and interpersonal attraction; the analysis also identifies ways to improve and diversify future research. Another literature review cited is a monograph that integrates research findings, based on over 200 items, concerned with student achievement and intergroup relations as two of the major outcomes of cooperative learning. Techniques for implementing small-group instruction are provided in four annotations. A handbook for teachers provides step-by-step procedures for setting up cooperative learning situations; another annotation provides guidelines that teachers and students must follow if they expect small-group instruction to be successful. Finally, three research studies are described, one of which is a long-term study of cooperative learning strategies in elementary grades. (MLF)

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THE BEST OF ERIC ON EDUCATIONAL MANAGEMENT

The Best of ERIC presents annotations of ERIC literature on important topics in educational management.

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Small-Group Cooperative Learning

1 **Cotton, Kathleen, and Savard, W.G.** *Instructional Grouping: Group Size. Research on School Effectiveness Project: Topic Summary Report.* Portland, Oregon: Northwest Regional Educational Laboratory, 1981, 47 pages. ED 214 703.

The Alaska State Department of Education sponsors the Alaska School Effectiveness Project, in which reviewers rate the quality of literature on specific educational topics. Administrators can then use the cumulative findings as a basis for educational policy decisions. For this project, eleven pertinent items were reviewed in order to support or refute two hypotheses related to small-group instruction.

The first hypothesis, "Small group instruction has a positive effect on the academic achievement of children in the primary grades," was supported by three relevant studies. After reviewing the literature, however, the project members added an important qualification to the original hypothesis: small groups must be closely monitored and carefully structured if this type of instruction is to be truly effective.

The second hypothesis, "Beyond the primary grades, students achieve equally well and have comparable attitudes and self-concepts whether they receive instruction individually, in small groups or in whole class settings," was also supported by a majority of the studies reviewed. Because the overall analysis of literature indicated no significant improvement occurred when small-group instruction was used, the authors recommend that for postprimary instruction "grouping decisions should be made which result in appropriate matches between grouping format, on the one hand, and factors such as instructional materials, teacher style and preferences, student learning styles, facilities available and costs involved."

The format of this publication is somewhat unusual. The first few pages present the findings and make recommendations. The remaining pages reproduce the reviewers' evaluation sheets for each piece of literature. These review sheets can serve as guides for those who wish to study small-group research in more detail.

2 **Hauge, Jerry.** "A Second Look at Small Group Instruction." *Clearing House,* 53, 8 (April 1980), pp. 376-78. EJ 229 243.

Hauge claims that "small group instruction is in itself a higher level learning activity," but he acknowledges that it is not without some attendant difficulties. With patience and understanding, however, the teacher can overcome the problems and achieve success. The rewards are well worth the effort: in small-group settings, students not only learn material as active participants in the educational process but simultaneously reap other benefits, such as leadership qualities and self-confidence.

The difficulties of working with small-group instruction are inherent in any new or unfamiliar activity. Teachers must allow time for participants to become comfortable with the new learning situation, and they must make the purpose and desired results clear for the students. Once students are accustomed to the setting and are aware of the teacher's expectations, good results are generally much easier to obtain. For this reason, small-group instruction may be somewhat inefficient at first, but its ultimate effectiveness often outweighs this inefficiency.

Another potential problem is the noise resulting from group discussions. Teachers are often unaccustomed to noisy classrooms, but, Hauge notes, this situation can be viewed positively: "Busy noise is good and constructive noise"; it shows that "students are enjoying themselves and learning."

After justifying the value of small-group instruction, Hauge gives strategies to help teachers plan small-group sessions. A diagram illustrating five modes of grouping is provided. Each of these modes posits a different role for the teacher—sometimes an active one, sometimes passive. For each session, the teacher must consider carefully the elements of time, use of classroom space, student ability, and methods for evaluating the success of the sessions.

3 **Johnson, David W., and Johnson, Roger T.** "Cooperative Small-Group Learning." *Curriculum Report,* 14, 1 (October 1984), pp. 1-6. EJ number not yet assigned.

In this brief but thorough review of the theory and practice of cooperative learning, Johnson and Johnson assert that "we are in a period of educational crisis." They note that the steady decline in student academic performance in the last twenty years has been attended by increasing personal and social alienation among students. More widespread use of cooperative learning could be a great help in remedying both aspects of this "dual crisis."

"Cooperative Small-Group Learning" is fashioned as a series of lists that briefly describe important concepts. After defining some basic elements essential to successful cooperative learning, the authors devote extensive space to principles of implementation. Their list of five major implementation strategies includes clear specification of objectives, careful preplanning prior to the actual classroom sessions, communicating goals and methods to students, monitoring effectiveness, and evaluating the results. A list

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of nineteen specific steps in the implementation process helps the educator to plan fully for each of the five strategies.

Principals play a central role in successful cooperative learning programs; the authors give guidelines and tips on how principals can most effectively promote cooperative programs and support teachers involved in them.

To show that cooperative teaching techniques can progress from theory to successful practice, the Johnsons include descriptions of two districtwide implementation programs.

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4 **Johnson, David W., and Johnson, Roger T.** "Having Your Cake and Eating It Too: Maximizing Achievement and Cognitive-Social Development and Socialization through Cooperative Learning." Paper presented at the 90th Annual Convention of the American Psychological Association (August 23-27, 1982). 17 pages. ED 227 408.

Not only do David and Roger Johnson, directors of the Cooperative Learning Center at the University of Minnesota, have an impressive bibliography of their own research on the effects of cooperative learning, but they have conducted a meta-analysis of virtually the entire body of literature on the subject. This paper reports the results of their analysis.

Taken cumulatively, research has tested two different effects of small-group instruction: student achievement and interpersonal attraction. In the former category, the Johnsons analyzed 122 studies conducted between 1924 and 1981. In the latter category, they surveyed 95 studies done between 1944 and 1982. Their conclusions about the results of research are similar for both areas: cooperative learning improves student achievement and interpersonal attraction more than traditional competitive and individualistic teaching techniques.

The benefits students might gain from cooperative education are numerous and sometimes difficult to measure, as the authors point out. In the area of interpersonal attraction, for example, students are likely to reduce alienation and master their aggressive impulses while improving their overall psychological health by participating in cooperative learning programs.

One of the chief virtues of this report is that it identifies ways to improve and diversify future research. Noting that cooperative teaching techniques are gaining both sophistication and specificity, the authors propose that researchers undertake the study of actual processes, such as student reaction to controversy, which occur in cooperative learning situations.

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5 **Johnson, David W., and others.** *Circles of Learning: Cooperation in the Classroom.* Alexandria, Virginia: Association for Supervision and Curriculum Development, 1984. 89 pages. ED 241 516.

About half-way through this handbook on cooperative education, teachers are reminded that they "will not become proficient in using cooperative learning procedures by attending a workshop or from reading this book. Teachers become proficient by *doing*." But educators could hardly find a more thorough book than this one to introduce them to the topic. *Circles of Learning* provides step-by-step procedure for setting up cooperative learning situations in the classroom and gives far-ranging advice on almost every aspect of the subject.

In the first two chapters, the authors define essential concepts related to cooperative learning, defend the need for incorporating cooperative methodologies into traditional classroom settings, and review research supporting their conclusions regarding the value of cooperative education.

Chapters 3 and 4 give clearcut procedures on how to design and carry out cooperative programs. A handy list of dos and don'ts is also included. There are imaginative mnemonic devices used for some concepts, for example, the four F's for teaching students cooperative skills—forming, functioning, formulating, fermenting. The all-important evaluation process for analyzing program success is fully addressed as well.

The role of principals and supervisors who oversee these types of educational programs is discussed in a separate chapter. The authors suggest the formation of support groups for participating teachers, and they supply extensive guidelines for those conducting support group meetings.

Circles of Learning concludes by debunking some myths about cooperative teaching—negative myths (that cooperative techniques undermine a student's ability to compete in later life) and positive ones (that cooperative methods are easy for teachers to master and are magic cure-alls for classroom difficulties).

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6 **Lordon, John.** "Small Group Instruction: To Make It Work." *Clearing House,* 54, 6 (February 1981), pp. 265-66. EJ 241 714.

Teachers who use small-group instruction in their classrooms must first realize that neither they nor their students have been trained "to work effectively in such situations," Lordon contends. He believes the problem stems from traditional teacher training, which emphasizes pedagogical techniques applicable primarily in large-group situations. Recognizing that successful small-group or multiple-group instruction requires a set of skills different from those needed for large-group settings, Lordon provides a number of specific guidelines that teachers and students must follow if they expect small-group education to be effective.

Careful planning is essential. Teachers must be specific in their goals and objectives for each group, and they should provide clear, written instructions on the procedures they expect students to follow. Efficient use of time, both the teacher's and the participants', should be a central feature of the planning process. There should be a system for evaluating the success of small-group instruction at the individual and group levels. Finally, a willingness on the teacher's part to change the types of groups formed will improve interest and add variety.

The list of guidelines Lordon provides for students emphasizes responsibility and cooperation. Because students do not receive extensive exposure to small-group educational situations, they are often not equipped with the social skills necessary for effective small-group learning, and it is the teacher's responsibility to cultivate in students the required skills. If students can learn to approach group teaching in a serious manner, they will understand the need for appropriate behavior, such as speaking quietly and not interrupting the work of other groups.

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7 **Parker, Ruth.** *Small-Group Cooperative Learning in the Classroom. OSSC Bulletin.* Eugene, Oregon: Oregon School Study Council, March 1984. 36 pages. ED 242 065.

This booklet serves as a convenient introduction to cooperative learning programs in schools. It includes a lengthy description of what actually goes on in a classroom if cooperative learning is to succeed. "Teachers," says Parker, "have the important, but often difficult, task of encouraging students to become responsible for their own learning and to rely more heavily upon their classmates for assistance in doing a task and evaluating an answer." Parker points out that attitudes must also change, for the teacher must be willing to share in the learning process since there are no ready-made answers to the questions students raise during the cooperative learning process.

Students, too, must begin to realize that learning can occur through helping and sharing as well as through competition. Suggestions for making this process easier include classroom organization changes and group assignment techniques. The booklet

also features a series of teachers' testimonials about the positive experiences that can grow out of teaching in cooperative learning settings.

The final section covers implementation. Parker identifies four principles for successful results. These include systemization and long-range staff development, a schoolwide rather than an individual-specific approach, the development of support groups during the early stages of implementation, and long-term training for teachers involved in cooperative programs.

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8 **Peterson, Penelope, and others.** "Ability X Treatment Interaction Effects on Children's Learning in Large-Group and Small-Group Approaches." *American Educational Research Journal,* 18, 4 (Winter 1981), pp. 453-73. EJ 255 850.

Peterson and colleagues reviewed research on small-group and large-group education and found that the evidence was inconclusive regarding the superiority of one method or the other in improving student achievement. In order to collect additional data on the subject, they designed this study in which each of two teachers taught geometry by using small-group techniques for one class and large-group techniques for another class. Each class contained a mix of high, medium, and low ability students. The researchers hypothesized "that neither the large-group approach nor the small-group approach would be more effective for all students." Pretesting and posttesting measured the students' degree of improvement.

Data analysis confirmed the hypothesis. Thus, the researchers explain, the results argue against claims of complete superiority for either large-group or small-group education: "We found that on the average, students did equally well on the achievement and the retention tests in the large-group approach as in the small-group approach."

When the data were refined, some trends did develop. Students with high ability and with low ability achieved more and retained more in the small-group approach than they did in the large-group approach, but the method of instruction created no significant difference in the achievement and retention for medium-ability students. The authors suggest that this trend was caused by interaction between high- and low-ability students in small-group settings. But the medium-ability students "tended not to be involved in explaining to other students in their small group. Thus, medium ability students tended to work individually in the small-group approach as well as in the large-group approach and did equally well in both approaches."

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9 **Slavin, Robert E.** *Cooperative Learning.* New York: Longman Inc., 1983. 147 pages. ED 242 707.

This monograph by Slavin, research scientist at the Johns Hopkins Center for Social Organization of Schools, is noteworthy for the thoroughness with which he integrates research findings with his own analysis of cooperative education. The bibliography (included) from which he draws his data comprises well over 200 items.

He begins by defining several key concepts; for example, he gives four distinct definitions for the seemingly simple term *cooperation* and notes that using precise terminology is essential for meaningful discussion of the topic. A chapter on various cooperative learning methods follows the introductory material.

Slavin then gives a complete analysis and review of literature concerned with two major outcomes of cooperative learning: student achievement and intergroup relations. In the area of achievement, he concludes "that the effects of cooperative learning...are primarily *motivational* effects, not *process* effects; cooperative incentive structures, not task structures, explain the effects of cooperative learning on achievement."

He believes the research is "unambiguous" in showing that there is a direct relationship between cooperative learning and improved intergroup relations. But he concedes that "there is much work to be done to discover the critical components of cooperative learning for intergroup relations and to inform a model of how cooperative learning methods operate to affect intergroup relations."

Cooperative Learning also includes sections on mainstreaming academically handicapped students by using cooperative teaching techniques, and it presents evidence for the effects of cooperative learning on noncognitive outcomes such as self-esteem and classroom behavior.

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10 **Slavin, Robert E.** "Synthesis of Research on Cooperative Learning." *Educational Leadership,* 38, 8 (May 1981), pp. 655-60. EJ 247 023.

Anyone wanting a succinct account of cooperative learning techniques and research would do well to begin here. Slavin begins with an eloquent argument for using cooperative methods in the classroom, but he reminds teachers that "it is not enough to tell children to cooperate"—there must be a set of activities that allow them to do so.

Slavin then describes five cooperative teaching methods: Student Teams-Achievement Divisions, Teams-Games-Tournaments, Jigsaw II, Learning Together, and Group Investigation. The specific virtues of each type of cooperative learning method are identified. Some methods work best at the elementary level, while others are more suitable for secondary students. Similarly, some methods are ideal for specific subject matters; for example, Group Investigation and Jigsaw II are especially good for teaching social studies.

An essential part of successful team learning is getting students to learn the value of group success. Slavin suggests ways of instilling this attitude in students, and he forewarns of some pitfalls associated with cooperative learning techniques.

The section that surveys research splits the findings into two

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general categories: academic achievement and intergroup relations. The literature argues strongly for the benefits of cooperative learning methods over traditional teaching methods. Of the 27 studies Slavin surveyed, 19 indicated that students involved in cooperative classroom settings exceed the achievement levels of their student counterparts who received traditional classroom education. Slavin identifies other research where achievement was studied in relation to subject matter, ethnic grouping, and geographic location of students.

An equally important consideration, Slavin feels, is the improvement cooperative teaching brings about in students' social skills.

11

Swing, Susan R., and Peterson, Penelope L. "The Relationship of Student Ability and Small-Group Interaction to Student Achievement." *American Educational Research Journal,* 19, 2 (Summer 1982), pp. 259-74. EJ 272 103.

Noting that recent research on small-group instruction has suggested some specific factors that may contribute to improved achievement in students receiving this kind of education, Swing and Peterson sought in this study "to investigate further student attitudes and student behaviors during small-group interaction as mediators of the effectiveness of small-group learning."

The researchers had one group of students participate in a brief training program "designed to improve the quality and quantity of task-related small-group interaction." Another group of students who did not receive this preliminary training served as a control group. Students with high, medium, and low ability levels were included in each group.

The effect of this training program was tested by measuring achievement after the students had been taught a four-week math unit in a small-group format. Throughout the four weeks, students were closely observed in order to determine the types and frequency of their interaction.

When the data were analyzed, Swing and Peterson discovered that "a number of task-related small-group behaviors were related positively to the academic achievement of low ability students, while one small-group behavior—higher order explaining—was related positively to the test performance of high ability students. Task-related small-group interaction was unrelated to the achievement and retention of medium ability students." Overall, however, the achievement levels of those students who participated in the preliminary training program were not significantly higher than the levels of the untrained control students.

12

Talmage, Harriet, and others. "The Influence of Cooperative Learning Strategies on Teacher Practices, Student Perceptions of the Learning Environment, and Academic Achievement." *American Educational Research Journal,* 21, 1 (Spring 1984), pp. 163-79. EJ 298 943.

Does the level of student cooperation in classroom learning situations make a significant difference in the level of achievement the students attain? This is one of the central questions Talmage and colleagues posed when designing this long-term study of cooperative learning strategies in grades 1 to 6.

Much recent research suggests that cooperative learning programs do correlate with higher levels of intellectual achievement among students, but, as the authors note, these programs have usually been "limited in implementation duration." They therefore designed their study to test the effects of cooperative learning strategies on attitudes of teachers and students, and on the students' actual level of achievement, over much longer periods of time. Teachers participated in the program for periods of one, two, or three years, thereby providing data to measure the effects of teacher experience on the success of cooperative learning.

The researchers tested four hypotheses: (1) that teacher attitudes toward cooperative learning were dependent upon participation in the program and on the length of participation, (2) that the students' perception of classroom cooperation would be influenced positively when the teacher had more experience with cooperative teaching methods, (3) that teacher experience in these methods would correlate with improved student achievement, and (4) that increased cooperation in the classroom learning environment would improve the students' overall achievement. For this study, reading and language arts were the subjects used to measure achievement levels.

A statistical analysis of data confirmed the first two hypotheses, but the third hypothesis was not clearly supported, for students of teachers more experienced in cooperative teaching methods improved their performance on reading achievement but not on language arts achievement. There was no statistical support for the fourth hypothesis; increased classroom cooperation did not seem to improve student achievement at significant levels.

Seeking to explain why this last hypothesis was not confirmed, the researchers point out that the schedules and classroom assignments of students caused inconsistencies in their participation in the cooperative learning environment, which in turn influenced the levels of achievement.

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